

Claims

What is claimed is:

- 1 1. A method for manufacturing an organic electroluminescent display, comprising:
2 the steps of:
3 forming a plurality of first display electrodes arranged in parallel on a
4 substantially transparent substrate;
5 forming an insulating layer on the transparent substrate, the insulating layer
6 including a plurality of slots perpendicular to the first display electrodes for
7 exposing the first display electrodes;
8 forming insulating ramparts on the exposed first display electrodes, the portion
9 of the insulating ramparts away from the substrate further forming overhangs, and
10 the portion of the cathode ramparts proximate to the substrate having sufficiently
11 high cross-linking for increasing the adhesion between the insulating ramparts and
12 the first display electrodes;
13 partially removing the insulating layer through the masking effect of the
14 overhangs for exposing the first display electrode;
15 forming an organic electroluminescent material on the exposed first display
16 electrodes; and
17 forming a plurality of second display electrodes on the organic
18 electroluminescent material.
- 1 2. The method according to claim 1, wherein the thickness of the insulating
2 ramparts is in a range of 1-5 μ m.
- 1 3. The method according to claim 1, wherein the angle between the substrate
2 and each overhang is in a range of 40-80 degrees.

1 4. The method according to claim 1, wherein the step of forming the insulating
2 ramparts further comprises the steps of:
3 forming a blanket of photosensitive material on the insulating layer;
4 illuminating the photosensitive material from one side of the substrate
5 opposite to the first display electrodes with the insulating layer as photo masks; and
6 processing the photosensitive material to expose the insulating layer.

1 5. The method according to claim 1, wherein the step of partially removing the
2 insulating layer by means of the masking effect of the overhangs is achieved by an
3 anisotropic etching process.

1 6. The method according to claim 1, wherein the cross-linking at the portion of
2 the insulating ramparts proximate to the substrate is stronger than at the portion
3 away from the substrate.

1 7. A method for manufacturing an organic electroluminescent display,
2 comprising the steps of:
3 forming a plurality of first display electrodes of high light transmission on a
4 substantially transparent substrate;
5 forming a substantially opaque insulating layer on the transparent substrate;
6 forming a plurality of slots at predetermined locations on the opaque insulating
7 layer;
8 forming a photosensitive insulating layer on the substrate;
9 illuminating the photosensitive insulating layer from light beams passing
10 through the substrate and the first display electrodes in sequence with the opaque
11 insulating layer as photo masks;
12 removing the un-illuminated portion of the photosensitive insulating layer to
13 form insulating ramparts;

14 proceeding an anisotropic etching process to the opaque insulating layer for
15 exposing the first display electrodes;
16 forming an organic electroluminescent material on the exposed first display
17 electrodes; and
18 forming a plurality of second display electrodes on the organic
19 electroluminescent material.

1 8. The method according to claim 7, wherein the thickness of the insulating
2 ramparts is in a range of 1-5 μ m.

1 9. The method according to claim 7, wherein overhangs are on the portion of
2 the insulating ramparts away from the substrate, and the portion of the insulating
3 ramparts proximate to the substrate having a sufficiently high cross-linking for
4 enhancing the adhesion between insulating ramparts and the first display electrodes.

1 10. The method according to claim 9, wherein the angle between the substrate
2 and each overhang is in a range of 40-80 degrees.

1 11. The method according to claim 7, wherein the cross-linking at the portion
2 of the insulating ramparts proximate to the substrate is more significant than at the
3 portion away from the substrate.

1 12. An organic electroluminescent display, comprising:
2 a plurality of first display electrodes of high light transmission formed in
3 parallel on a substantially transparent substrate;
4 an opaque insulating layer having slots of stripe shapes formed on the first
5 display electrodes, the slots are perpendicular to the first display electrodes;
6 a plurality of insulating ramparts of reverse-tapered cross-section formed on
7 first display electrodes at the slots, the insulating ramparts including overhangs on
8 the portion away from the substrate such that the insulating layer is formed utilizing

9 an anisotropic etching process so as to be in parallel to the insulating ramparts and
10 the first display electrodes are exposed partially;
11 an organic electroluminescent material disposed on the exposed first display
12 electrodes; and
13 a plurality of second display electrodes formed in parallel on the organic
14 electroluminescent material, the second display electrodes being perpendicular to the
15 first display electrodes.

1 13. The organic electroluminescent display according to claim 12, wherein the
2 angle between the substrate and each overhang is in a range of 40-80 degrees.

1 14. The organic electroluminescent display according to claim 12, wherein the
2 thickness of the insulating ramparts is in a range of 1-5 μ m.

1 15. The organic electroluminescent display according to claim 12, wherein the
2 cross-linking at the portion of the insulating ramparts proximate to the substrate is
3 more significant than at the portion away from the substrate.